

The entire eye (minus the extraocular muscles) is called the *globe*. In this section we take a look at the structures that constitute the entirety of the globe which, because of the perishability of the interior structures, were not described until quite late in anatomical history.

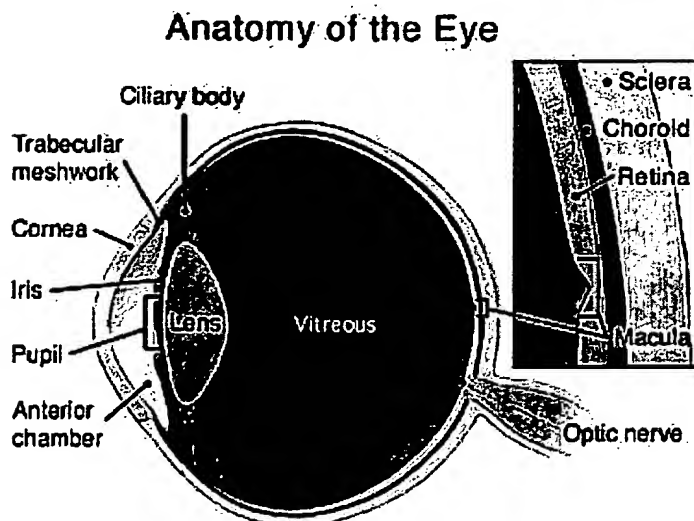


Figure 1. Normal eye (click on labels for more

Figure 1 is a sagittal section of the globe and is self-explanatory but it is not complete. For example, the *fovea centralis* lies within the elevated area of the retina called the *macula* but is not labeled on this drawing (it is the depressed area in the enlarged view of the macula). It is the macula (and the fovea within it) that is involved in **macular degeneration**. The macular area is the part

of the eye responsible for color and daytime as well as reading vision.

The human eye is a specialized extension of the brain and the two are connected via the 3rd cranial (*optic*) nerve. The eye itself is roughly globular in shape and hollow and is made of a leather-like tissue called — the *sclera*.

## Sclera

aka *scleral coat*; *white of the eye*

The leathery envelope serving as the outer, protective wall of the eye that extends from the cornea onto the optic nerve where it serves as a sheath up to and through the bony optic canal. When seen from the front, it is commonly (but incorrectly)

referred to as the *white of the eye*. It is a tough, fibrous tissue consisting of highly compacted flat bands of collagen bundles which interweave in all directions and which are interspersed with elastic fibers.

At the front of the eye, this random interweaving becomes more orthogonal. Here the sclera acquires an outer coating of keratinized epithelium and an inner coating of endothelium which together produce a relative dehydration of the tissue making it transparent (see *cornea*).

There has always been some mild debate as to whether the sclera should be differentiated from the clear cornea, structurally. There is histological evidence supporting this differentiation, but anatomically it is difficult to determine exactly where the cornea ends and the sclera begins. Certainly, the curvature of the cornea is much greater than the rest of the globe and many view the cornea as being seated within the scleral coat. For the purpose of simplicity and orientation, we will adopt the convention of distinguishing the two as separate entities. Physiologically, they are quite different as we shall see (see *cornea*).

**Episclera** — as its name implies — is a vascularized fibrous tissue coat that overlies the outer sclera and is bound to it.

The eye can be divided into two main segments: anterior and posterior which segments will be covered separately in the next two sections.



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